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Attorney's Docket No.: 07314-013001

REMARKS

In view of the following remarks, reconsideration and allowance are respectfully requested.

Claims 1-87 were pending at the time of this Office Action.

Claims 1-7, 16-36, 45-65, and 74-87 were withdrawn from consideration in the reply filed on July 11, 2005. Claims 8-10, 12-14, 37-39, 41-43, 66-68, and 70-72 are currently amended.

Claims 88-90 are currently added. Therefore, Claims 8-15, 37-44, 66-73, and 88-90 are currently pending, with Claims 8-10, 12-14, 37-39, 41-43, 66-68, and 70-72 being independent.

Claims 8-15, 37-44, and 66-73 stand rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. This contention is respectfully traversed.

Claims 8-15, 37-44, and 66-73 were rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Naimpally et al. (U.S. Patent No. 5,294,974). This contention is respectfully traversed.

35 U.S.C. 112

Claims 8-15, 37-44, and 66-73 all comply with the written description requirement. To comply with the written description

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requirement of 35 U.S.C. 112, para. 1, each claim limitation must be expressly, implicitly, or inherently supported in the disclosure (MPEP 2163).

Claims 8-10, 12-14, 37-39, 41-43, 66-68, and 70-72 are amended to recite "wherein said second QP value is dependent only upon a relationship to the first QP value, and wherein the relationship comprises a property that the second QP value is lower than the first QP value so that said at least one of the U and V color channels has finer quantization resolution than the Y luminance channel for said first macroblock." The claim amendments are not new matter and are supported in the specification. For example, paragraph 39 on pages 13-14 of the specification discloses the following patentable subject matter.

Another aspect of the present invention is a technique for reducing the level of chroma noise that results from any given value of the quantization parameter (QP) used during compression, thereby improving image quality. This is accomplished by utilizing a lower value of QP for the U (=R-Y) channel than for the Y channel. Similarly, the quality of V (=B-Y) may also be improved by utilizing a lower QP value for the V channel than for the Y channel.

Furthermore, paragraph 40 on page 14 of the specification supports the claim amendments. For example, paragraph 40 discloses the following patentable subject matter.

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A simple method of implementing a reduced chroma QP value is to subtract a constant value from the QP value used for the Y (luminance) channel.

Alternatively, a separate constant value (lower than the QP value for Y) might be used for each of U and V. For example, "2" might be subtracted from the QP value for Y to yield the QP value for U, and "1" might be subtracted for the QP value for Y to yield the QP value for V. Any useful value of the amount to subtract can be used, limited only by a minimum value of "1" for the applied QP value.

Therefore, Claims 8-10, 12-14, 37-39, 41-43, 66-68, and 70-72 are patentable at least because the specification contains a written description of the patentable subject matter in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the recited subject matter.

Claims 11, 15, 40, 44, 69, 73 are patentable at least for depending upon an allowable base claim (e.g., base Claim 10 for Claim 11; base Claim 14 for Claim 15; base Claim 39 for Claim 40; base Claim 43 for Claim 44; base Claim 68 for Claim 69; and base Claim 72 for Claim 73). Allowance of these dependent claims is respectfully requested.

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35 U.S.C. 102

Claims 8-15, 37-44, and 66-73 are all patentable over Naimpally at least because Naimpally fails to anticipate each and every feature of the claims. Independent Claims 8-10, 12-14, 37-39, 41-43, 66-68, and 70-72 are amended to emphasize their patentable distinctions over Naimpally. For example, these claims recite "wherein said **second QP value is dependent only upon a relationship to the first QP value**, and wherein the relationship comprises a property that the **second QP value is lower than the first QP value** so that said at least one of the U and V color channels has finer quantization resolution than the Y luminance channel for said first macroblock." Naimpally fails to disclose that the QP of the U and V color channels are **only dependent upon a single relationship**. For instance, Naimpally discloses that the QP values are dependent upon the average of the U and V sample or pixel values in that macroblock, in which the average of the U and V sample or pixel values in that macroblock are generated by the color average circuit 208 (Naimpally: Figs. 2, 6; Col. 5, lines 36-47, 59-68; e.g., Naimpally discloses that "the color-average circuitry 208 averages the sixty-four pixel values in each of the blocks of (B-Y) and (R-Y) pixels that make up a macroblock"). Naimpally also discloses that the QP values are dependent upon

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quantization artifacts in saturated or nearly-saturated red and orange objects (Naimpally: Col. 5, lines 47-50; Col. 6, lines 28-34, 59-66; Col. 7, lines 61-68; Col. 8, lines 1-6; Tables 1-2). For example, Tables 1-3 show that the quantization step size is dependent upon "red or near-red macroblocks" (Table 1), "near red signals with include some blue" (Table 2), "cyan and near-cyan objects and ... red and near red objects" (Table 3) (Naimpally: Col. 7, lines 61-68; Col. 8, lines 1-5). Furthermore, Naimpally discloses that the QP values are dependent upon (1) "colors in which the human eye is sensitive," (2) "colors in which the human eye is less sensitive," or (3) "a function of **color hue and saturation**" (Naimpally: Col. 6, lines 37-44). Therefore, Naimpally teaches that the QP values are a function of multiple relationships, and not a single relationship as recited in the independent claims. Furthermore, Naimpally discloses that the QP values are a function of different types of relationships from the single relationship recited in the independent claims. Hence, the independent claims are patentable over Naimpally for at least these reasons. Because Naimpally fails to disclose these features of the independent claims, the rejection under 35 U.S.C. 102 should be respectfully withdrawn.

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Claims 11, 15, 40, 44, 69, 73 are patentable at least for depending upon an allowable base claim (e.g., base Claim 10 for Claim 11; base Claim 14 for Claim 15; base Claim 39 for Claim 40; base Claim 43 for Claim 44; base Claim 68 for Claim 69; and base Claim 72 for Claim 73). Allowance of these dependent claims is respectfully requested.

Claims 88-90

Newly added Claims 88-90 are patentable for at least depending upon an allowable base claim (e.g., base Claims 8 or 12 for Claim 88; base Claims 37 or 41 for Claim 89; and base Claims 66 or 70 for Claim 90), as well as for reciting patentable subject matter in their on right. These dependent claims do not add new matter and are supported in the specification. For example, paragraph 42 of the specification refers to a lookup table disclosed in the co-pending application. The specification incorporates by reference co-pending U.S. Patent Application 09/798,346, entitled "High Precision Encoding and Decoding of Video Images," which is assigned to the assignee of the current disclosure (Instant disclosure: Page 13, paragraph 39; Page 15, paragraph 42) (MPEP 2163.07(b) Incorporation by Reference). In one example, the co-pending patent application discloses, a look-up table for

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mapping QP values (See U.S. Patent Application 09/798,346: Page 15, lines 14-30; Application Publication No. US-2002-0154693-A1: Paragraph 62). As noted in MPEP 2163.07(b), instead of repeating some information contained in another document, an application may attempt to incorporate the content of another document or part thereof by reference to the document in the text of the specification. The information incorporated is as much of a part of the text of the application, and should be treated as part of the text of the application as filed (MPEP 2163.07(b)). Therefore, allowance of these dependent claims is respectfully requested.

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Conclusion

In view of the amendments and remarks herein, the Applicants believe that Claims 8-15, 37-44, 66-73 and 88-90 are in condition for allowance and ask that these pending claims be allowed. The foregoing comments made with respect to the positions taken by the Examiner are not to be construed as acquiescence with other positions of the Examiner that have not been explicitly contested. Accordingly, the arguments for patentability of a claim should not be construed as implying that there are not other valid reasons for patentability of that claim or other claims.

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Respectfully submitted,



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